THE EVALUATION OF MEDICAL CARE PROGRAMS*

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My topic on this occasion is the evaluation of medical care programs, but with special emphasis on the care of the patient. I approach this subject with a great deal of hesitancy because I see in the audience several of the leading authorities in the evaluation of the quality of medical care, and I hope that they will tolerate my modest role as a commentator while they continue to provide the creative impetus in this field. Having made these conciliatory remarks, I feel absolved from the necessity of being uncontroversial. From here on I shall try to be "provocative," as the planners of the conference have asked us to be.

According to some, a medical care program is to be judged by the extent to which it achieves the explicitly recognized, or the implicitly accepted, objectives of the program itself. It is said that a program cannot be faulted for failing to achieve what it never set out to accomplish. This position is certainly appropriate when the emphasis is on evaluating the pathways by which stipulated objectives are reached. For example, one might ask how efficiently a program objective is attained. But there are other values that apply to the methods for attaining objectives that must also be used as criteria. These values include such factors as the extent of compulsion to participate in the program, freedom of choice for participants and providers, extent of restraint on professional activities and judgment, maintenance of a pluralistic medical care system, and so on. In other words the degree to which objectives are achieved is to be weighed against the "price," in terms of technical, economic, and other value criteria.

From a higher vantage point it is not sufficient to accept any program objectives as given, and merely to evaluate the extent to which,

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and the manner in which, such objectives are attained. The program objectives themselves are subject to evaluations in terms of socially defined values, aspirations, and expectations in general; and, in particular, in terms of the role that the medical care system is expected to play in realizing these expectations. For example, a program that makes medical care available according to ability to pay, rather than need, and that emphasizes the highest standards of care for the few who can afford its services, may be rejected as inconsistent with the aspiration that care be available to all according to need. The appropriate objective of medical care programs may be said to be the delivery of appropriate medical care services according to need, with maximum efficiency, and with minimum violence to basic social, political, and ethical values.

Since no program and no society can do all the things that need to be done, it is customary to evaluate objectives in terms of some order of priorities. I should like to emphasize that economic cost-benefit analysis is only one method of generating priorities. I should like to suggest for your consideration that there is infinitely more to the notions of "costs" and of "benefits" than economics can encompass.

So far we have dealt with the evaluation of a program as a whole. It may be necessary to take a program apart, as it were, and look at component units, aspects, or processes. Once again one may examine each of these components in terms of objectives, and the degree and manner of achieving such objectives. These constitute an application, on a smaller scale, of the approaches already described. However, the relations between activities and outcomes may be easier to detect and establish at this less inclusive level. There is a very important additional advantage: the opportunity to examine the process of the care of the patient itself and to pass judgments on the quality of performance of professional personnel.

The quality of the care the patient receives is an elusive thing: difficult to define either conceptually or operationally. In fact it may not be any one thing, but a bundle of things, each to be teased out and appraised separately. For this reason one may not be able to speak of medical care as "good" or "poor" as a whole. It may be necessary to examine its several ingredients separately and to arrive at a quality profile rather than a single assessment.[1] There may also be internal conflicts so that improvement in one aspect of care may tend to be associated with deterioration in another.

There are, on the other hand, several factors that tend to unify medical care and to simplify evaluation. There is, for one, an integrative process within the individual practitioner that appears to result in close correspondence in performance in the different aspects of care. Through a variety of organizational devices and interactions a similar though less complete homogeneity may characterize the performance of medical institutions. The result may, in fact, be an "overall capacity for goodness in medical care"[2] for any one physician or medical care facility. Moreover, there is a certain all-or-none quality about the care of the patient so that if it fails seriously in any one critical element, one can say that it has failed as a whole.

Inadequacies in assessing the quality of the care given the patient arise if the concept of quality has not been clearly defined, or defined too narrowly in terms of certain aspects of technical performance alone. Another difficulty is in translating the conceptual definitions into operative equivalents that can be measured. Even then there are additional problems of measurement including difficulties of access to true and complete information, of the formulation of appropriate criteria and standards, and in the reliability and validity of judgments resulting from the application of standards to the available information. These are technical aspects of quality evaluation that I cannot take time to describe here. For a recent review I refer you to A. Donabedian, "Evaluating the Quality of Medical Care."[3]

Within the context of the evaluation of a program, it seems to me that the most direct approach to assessing the quality of the care of a patient is the examination of the process itself, with major emphasis on professional performance including such functions as diagnosis, treatment, prevention, rehabilitation, social and psychological management, and so on. Stated in its simplest form the question asked is whether the health professional practices what is generally agreed to be "good" medical care, including nursing, etc. The assumption is made that "good" medical care can be defined, and that it makes a difference in terms of the health and well-being of the patient. Although I recognize all the reservations one must make, I still feel that, in general, these are reasonable assumptions to make.

The standards by which the process of care is judged derive, essentially, from consensus among the leaders of a profession as to what is appropriate management in specified situations. To the extent that con-

sensus is lacking, the standards become ambiguous or even inoperative. Since the science and art of medicine are in constant change, the standards used for evaluation also change. Nevertheless, at any given time it is possible to say whether management conforms to current standards.

There are some situations in which the evaluation of the process of care is not appropriate. This is true when the purpose is not to determine whether a particular procedure has been used, but whether the procedure is effective. We do not ask whether "good" medical care has been applied, but whether it makes a difference. Here we must turn to the measurement and evaluation of the outcomes, or end results, of care in terms of health and well-being. Outcomes, then, are used as the ultimate validation of the standards of patient care. However, there is another way in which outcomes are used in the evaluation of programs. They are used when it is not possible to evaluate the process of care directly, and when one seeks some evidence that good care has been applied. I am suggesting that in spite of the considerable face validity that they possess, outcomes may be used in a very real sense as substitutes for a more frontal approach to process.

There are important limitations on the use of outcomes either as validators or indicators of the process of care. Unfortunately health is a difficult concept to define and even more difficult to measure. Hence outcomes are often measured at best in terms of the absence of disease and, more usually, in terms of death, illness, and disability. Frequently used indicators of impacts include measures of longevity, crude or age specific mortality rates, and morbidity rates. Attempts to develop a unitary index of health have, so far, been rather disappointing.

Outcomes are partly determined by the quality of care and partly by other factors such as age, sex, nutritional status, severity, stage of condition, etc. In all comparisons, factors such as these must be taken into account so that one compares population groups that are alike in all respects other than medical care. One should also use the appropriate measures of outcome. Death, for example, is inevitable in many situations and cannot be used as an indicator of failure to apply the best that contemporary medicine has to offer. Another limitation is that physical and social disability may take a long time to appear and cannot always be used as contemporaneous evidence of the quality of care. An additional difficulty is that we do not have the highly specific

system or normative criteria with respect to outcomes that we have with respect to process and the assessment of process. While we can specify what the physician ought to do, we can not be nearly so specific regarding the level of health that should be attained and maintained as a result of medical care.

Outcomes nevertheless have the unique power to validate or discredit current standards of care. As end products, they also reflect, as nothing else can, the integrated and cumulative effect of the entire range of health activities to which a population is subject. But, by the same token, they reflect a host of other influences that affect health, and often they do not give sufficient indication of the mechanisms by which good or bad results have come about.

There is another approach to obtaining some indirect information about the process of caring for a patient: the examination of structures that support and surround the process of care. This is the evaluation of the settings and instrumentalities available, or used, for the provision of care. While it includes the physical aspects of facilities and equipment, it goes far beyond to include the characteristics of the administrative organization and the qualifications of health professionals. "Structure," as used here, includes the properties of the resources used to provide care and the manner in which they are organized.

Two major assumptions are made when structure is used as an indicator of quality. The first is that better care is more likely to be provided when better qualified staff, better physical facilities, and better fiscal and administrative organization are used. The second is that we know enough to identify what is good in terms of staff, physical structure, and formal organization. It is important to emphasize the fact that staff qualifications, physical structure, and formal organization are not equated with quality. It is only expected that there is a relation between these structural elements and the quality of care so that, given good structural properties, good care is more likely (though not certain) to occur. Hospital accreditation and the certification of providers under Medicare are very largely based on this fundamental assumption. There is a fair amount of evidence that favorable structural characteristics are associated with greater likelihood of professionally acceptable care. But there is also evidence that there are situations when this relation does not hold true. There are appreciable hazards in the use of structural characteristics alone as indicators of the quality of the care of the patient.

So far we have spoken of the appraisal of process, outcome, and structure as if they were mutually exclusive choices. The contrary is true. These are mutually reinforcing approaches. Any practical system of appraisal should probably include elements of all three. The total information obtained when all three are used simultaneously may well be greater than the mere sum of the three, since the interrelations among them gives a deeper understanding of the situation of the patient's care.

Another word of caution concerns the constant emphasis on the difficulties of evaluating the quality of care. These difficulties are real enough. On the other hand, the deficiencies in quality are often gross in nature and significant in extent. I believe that the methods now available are adequate to detect deficiencies of this nature and that we know enough to take reasonably effective action.

The quality of medical care is probably made up of a very large number of components or dimensions or aspects, whatever you wish to call them. These would include the acceptability of the patient as one of the dimensions along which professional performance is rated or evaluated. And I was actually thinking of something of this order when I spoke about possibilities of internal conflict, so that improvement in one dimension—let us say technical performance—might not be associated with improvement in another dimension, for example acceptability to patients or their satisfaction. I even suggested that there may be an inverse relation so that, in some situations, professionally superior care may be less acceptable to the client than care that is professionally inferior.

There is some evidence from the studies of Peterson[2] in North Carolina, and of Morehead and her associates in New York City,[4] as well as from studies of the Health Insurance Plan (H.I.P.), which show that there may be little correlation between the satisfaction of the patient with the services of a physician and the technical performance of the same physicians, or groups of physicians, when judged by expert colleagues. This being the case, the satisfaction of the patient and compliance with the highest professional standards will have to be rated separately. Further, in setting and achieving program objectives, priorities may have to be assigned to these two aspects of care. I am not saying that these two aspects cannot be reconciled. For example, the "family health demonstration" at the Montefiore Hospital Medical Group has shown that in a carefully designed program it is possible to

achieve acceptability and satisfaction of patients as well as high levels of technical performance.[5, 6] I am suggesting, however, that the reconciliation in a medical care program of performance in various dimensions of quality requires identification of these dimensions, separate evaluation of performance in each, and study of the factors that relate to performance in each dimension. If there are conflicts, the reasons for these should be understood. It then becomes possible to plan so that the conditions for optimum performance in each dimension are assured or, if this is not possible, to arrange for the best possible compromise.

In measuring the over-all effectiveness of a system or program of medical care it is certainly of central importance to determine what proportion of those who need care are actually served and how much service they receive. It is true that, by and large, one cannot have quality without quantity although one can have quantity without quality. Even when considering the quality of professional performance, quality and quantity are inseparably intertwined, and it may be better to speak of appropriate professional care in its quantitative and qualitative aspects.

If one is interested in the relation between structure and outcome, certainly the issue of the quantity of care provided becomes extremely important. I have talked about the relation between structure and process without mentioning the relation between structure and outcome, which is another aspect of the evaluation of a program and of the validation of what we think we know about structure. Many of us feel we know how to set up a program that will provide care of high quality. In other words, we feel we know what are the structural prerequisites of good care. But our notions are subject to testing in two ways. First, we may independently evaluate the process of care delivered within the context of a given program and, second, we may evaluate the health outcomes that are achieved by a program without necessarily taking time to evaluate the intervening process of care. I think the classic example of the second approach is the examination of prematurity and perinatal mortality for H.I.P. subscribers as compared to a sample of the general population.[7] The performance of a highly structured medical care system (H.I.P.) was compared with another that could be called unstructured or loosely structured. The question to be answered was which of these two produced better health results. It seems reasonable to conclude that the superior results for H.I.P. subscribers were obtained

because of more service as well as better service. In other studies, however, it has been shown that H.I.P. subscribers receive fewer hospital services (especially for certain diagnostic categories), probably without sacrifice of quality.[8, 9] Unfortunately these assumptions concerning the reasons for better outcomes and the effects on quality of lower levels of hospital utilization, while supported by a wealth of circumstantial evidence, are not fully proved. We need many more studies in which are examined the relations among the three elements in question: structural features of programs, the conduct of professional care in its quantitative and qualitative aspects, and the health status achieved by persons who receive all or most of their care under a given program.

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